AITI Report
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Rockwell NAAO Technical Order Transfer Tests

June 12, 1987

Prepared for
Lawrence Livermore
National Laboratory
Air Force Logistics Command
AITI Project

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Test	File Set	Document
SYSCON 87-05	Rock 87-01	PTO 35D3-7-10-1

Lawrence Livermore National Laboratory

Contents

1 Executive Summary

The AFLC/AITI Standards Project is testing the Military Standard for the Automated Interchange of Technical Information, MIL-STD-1840 (the Standard). The objective of the tests is to demonstrate the validity of the transfer protocol defined in the Standard itself and the viability of standardized formats for the transfer of technical information defined in other specifications used by the Standard.

One document (file set) was prepared by Rockwell NAAO for this test. The document was prepared in accordance with Appendix A of the May 7, 1986, draft revision of the Standard. The file set, on magnetic tape, was delivered to the ATOS laboratory facility at SYSCON Corporation, San Diego, California, for testing. The file set consisted of a declaration file and SGML tagged text files. An attempt was made to write the files on magnetic tape in accordance with FIPS PUB 79 and the Standard.

The tape format was in not accordance with FIPS PUB 79. The declaration file was technically incorrect in that the illustration files were not actually on the same reel of tape. The previous delivery of July 1986 was accepted with 10 IGES illustration files on a separate tape. Barring this anomaly, the declaration file was acceptable.

The text files could not be processed due to difficulties with the file names in the tape header records that labeled the files.

It appears, from conversations after the test, that the errors were generally a result of unfamiliarity with new methods of file set preparation.

2 File Set Preparation and Processing

The transmission tape was written at the Rockwell Western Computing Center, Seal Beach, California, on an IBM 30xx using the MVS operating system. The text files were prepared (tagged) at North American Aircraft Operations, El Segundo, California, on an IBM 4381 using the VM/CMS operating system.

The document prepared was PTO 35D3-7-10-1, Maintenance Instructions, Organizational and Intermediate, Trailer – Secondary Power System Equipment. The document was prepared in accordance with Appendix A of the May 7, 1986, version of the Standard. This is the same document that the small sample tests of 1986 attempted to transfer. The text files, including header records, were not modified since that submission.

The file set, on magnetic tape, was delivered to the ATOS laboratory facility at SYSCON Corporation, San Diego, California, for testing. The initial tape processing was performed on a VAX.

3 Test Results

Only the test results for the transmission envelope are presented. The test could not proceed past this point because the file names in the labels for each file (HDR1) had been prefixed by a security code. This procedure is prescribed by Rockwell Information Systems security requirements. This is the first occurrence of a conflict between the internal security procedures of a submitting organization and the requirements of the Standard. It has been determined, after the fact, that this problem can be avoided with prior arrangements with the Rockwell Information Systems management. The event itself should be attributed to inexperience with the details of the preparation procedure.

Problem Numbering

In order to avoid repetitious statement of recurring problems encountered during the preceding year of testing, certain problems will be identified by numbering them according to the standard involved and the order of occurrence: for example, IGES-1 or SGML-3. When the same problem is encountered in a submission from a different sending system, it will be referred to by that number. These numbered problems will include only difficulties or deficiencies inherent in the Standard or the specifications on which the Standard calls. Problems attributable to preparation by the sending system or by vendor-supplied hardware/software will be identified separately and specifically.

Transmission Envelope

Analysis

The document transmission envelope consists of the tape and file labels (found "in" the magnetic tape), the document declaration files, and the header records for the text and illustration files. The envelope created by Rockwell NAAO had several significant flaws. The analysis is based on a hexadecimal dump format captured from the tape as the tape was read in by a special diagnostic program.

a. The file name in header record 1 for the document declaration file contained the following string instead of the expected "DOC001": "YFF144.DOC001" . Examination of other file header records showed this to be a consistent error. (See 3.0)

b. The text file headers claimed that the text data were in ANSI type D variable length records, where in fact all records were 80 characters in length. The unused portion of each pseudo-variable length record was padded with blanks. Ad hoc conversation with Rockwell NAAO personnel revealed that the padding to 80 characters was an artifact introduced by transmitting the data from El Segundo through an RJE setup to Seal Beach.

Both of the deficiencies noted above had not occurred with prior transmissions from this source. The preparation procedure for this transmission had several new aspects which provided the opportunity for error. It is expected that these minor problems will not reoccur.

The successful processing of the IGES illustration files was previously reported in AITI Test Report 86-1.

Statistics

The transmission contained one document. The transmission contained 13 text files and no illustration files. No statistics could be gathered on the files because the problem with the file naming convention diverted processing from its normal course, and the files were not read into the VAX in the usual manner.

4 Conclusions

The failings of the file set submitted appear to be the result of inexperience rather than inability. The failure to include the IGES illustration files was a misunderstanding of the requirement stated in the Standard. The other errors were, in effect, surprises to all concerned. The unexpected prefixing of a user name to the filename in the tape label can be avoided by prior arrangement with data processing management. The padding of text records to 80 characters was an artifact introduced by the use of a remote job entry terminal to transfer data from El Segundo to Seal Beach. These errors, although they prevented full processing of the data, are minor and are not expected to reoccur.

5 Exhibits

No exhibits have been appended to this report. The text files were not accepted during the input processing from tape. The illustrations were reported in AITI Report 86-1.